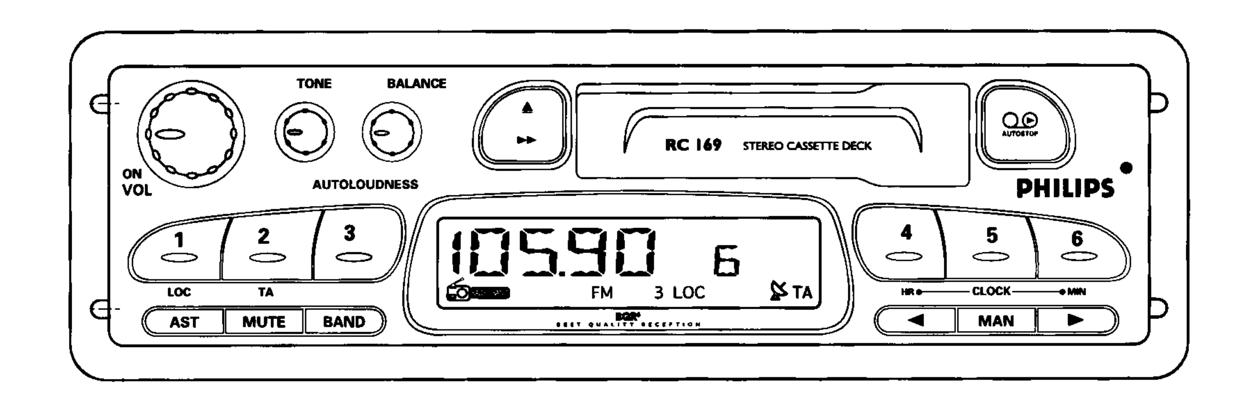
Cassette Car Radio 79RC169/00/80
79RC189/00/80

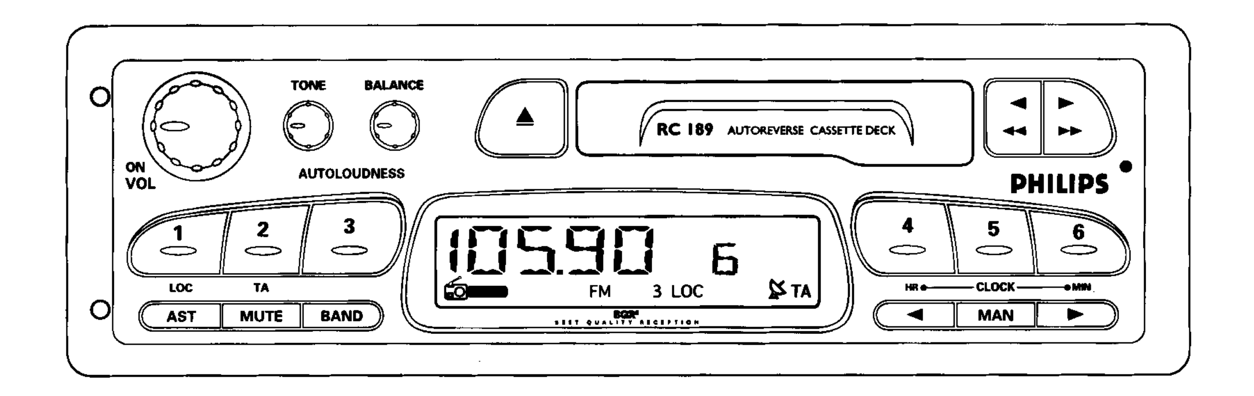


For repair information of the cassette deck see Service Manual of Car cassette deck TN301NX-227 (for RC169) or CDS-36PS2 (for RC189)

Service Manual

12 V





Published by Philips Car Systems Printed in The Netherlands

4822 725 23467

PCS 77 747





Table of contents

Page

Technical Specifications

General

Power Supply	:	9.5 - 15.6V
Quiescent Current (at 12.6V)	:	< 4.0mA
Fuse	:	3A

Radio

FM	:	87.5 - 108MHz, 50kHz step
LW	:	144 - 288kHz, 1kHz step
MW	:	531 - 1629kHz, 9kHz step
Aerial input impedence	:	75 ohm
IF-FM (1/2)	:	10.7MHz/72.2MHz
IF-AM(1/2)	:	10.7MHz/450kHz
α - 3dB	:	6~10μV
SDS (10 dB channel separation)	:	150uV ± 3dB
Stereo channel separation	:	> 21dB
FM sensitivity for 26dB S/N	:	< 4.4μV
MW sensitivity for 26dB S/N	:	< 22μV
LW sensitivity for 26dB S/N	:	< 35μV

Cassette Deck

Number of tracks	:	2 X 2
Tapespeed	:	4.76 cm/second +3% -1%
Wow and Flutter	:	< 0.35%

Amplifier

Output Power (D=10%)	:	2x4.5W ± 1dB/4Ω
Loudness (auto)	:	4~8dB at 100Hz
Tone	:	8~24dB at 10kHz



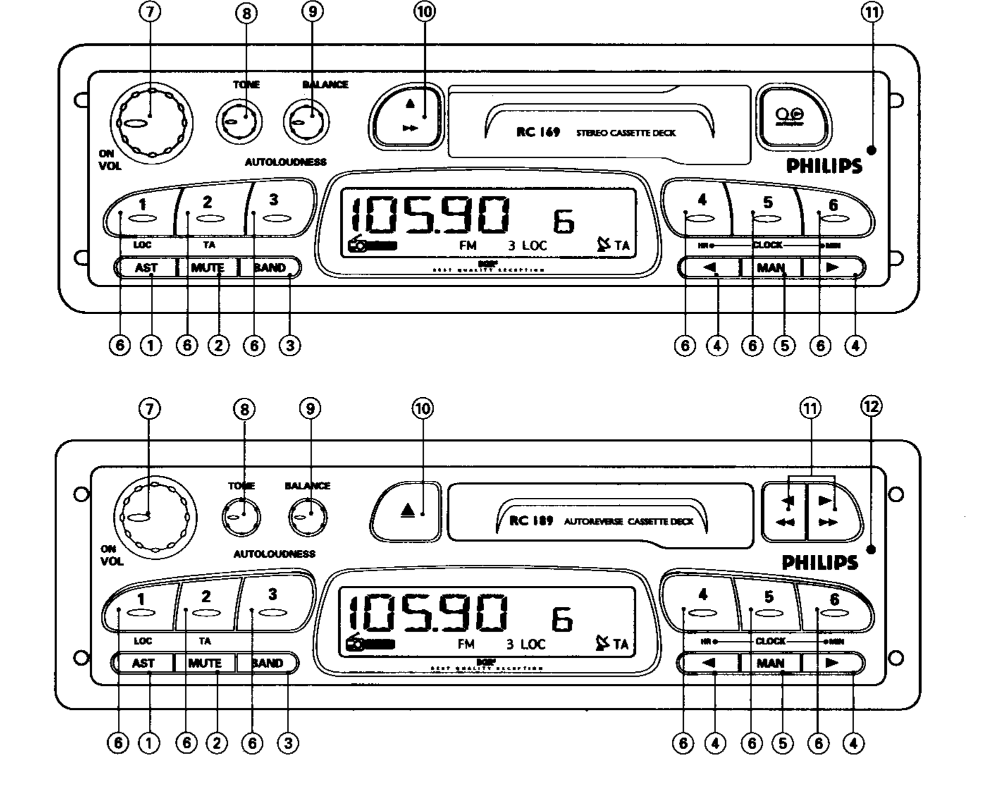
WARNING

All IC's and many semiconductors are susceptible to electronic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you care connected to the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

ESD Equipment :

Anti-static table mat	large 1200x650x1.25mm	4822 466 10953
	small 600x650x1.25mm	4822 466 10958
Anti-static wrist band		4822 395 10223
Connection box (1MOhm)		4822 320 11307
Extendible cable (to connect wrist band to conn. box)		4822 320 11305
Connecting cable (to connect table mat to conn. box)		4822 320 11306
Earth cable (to connect any product to mat or box)		4822 320 11308
Complete kit ESD3 (combining all above products)		4822 310 10671
Wristband tester		4822 344 13999



SUMMARY OF CONTROLS

① Auto Store (AST) / Local/Distant mode (LOC)
② Mute (MUTE) / Traffic Announcement (TA)
③ Band (BAND)
④ Search tuning and manual tuning (◀ and ▶) / Clock adjust (*HR* and *MIN*)
⑤ Manual tuning on/off (MAN) / Clock key (CLOCK)
⑥ Presets (1-6)
⑦ On/off-Volume (ON-VOL)
⑧ Tone (TONE)

For RC169 only
⑨ Balance (BALANCE)
⑩ Cassette eject (▲) and fast forward (▸▸)
⑪ Blinking LED

For RC189 only
⑨ Balance (BALANCE)
⑩ Cassette eject (▲)
⑪ Fast forward and rewind (◂◂ and ▸▸) / Reverse tape direction (◀▶)
⑫ Blinking LED

CLOCK
The radio incorporates a 24 hours clock.

Clock display
– Press the CLOCK key for at least 2 seconds (until you hear a beep).
– The display shows the time. After any tuning operations, the frequency will be displayed for about 10 seconds.

Setting the clock
– While the display shows the clock time, you can adjust time setting by pressing a 2-key combination as follow:
CLOCK+ ◀ to adjust hours
CLOCK+ ▶ to adjust minutes
To switch back to frequency display, press the CLOCK key for about 2 seconds (until you hear a beep).

TRAFFIC ANNOUNCEMENTS ON FM
You can switch on the TA mode to give priority to Traffic Announcements. Traffic Announcements can then interrupt cassette playback or mute.

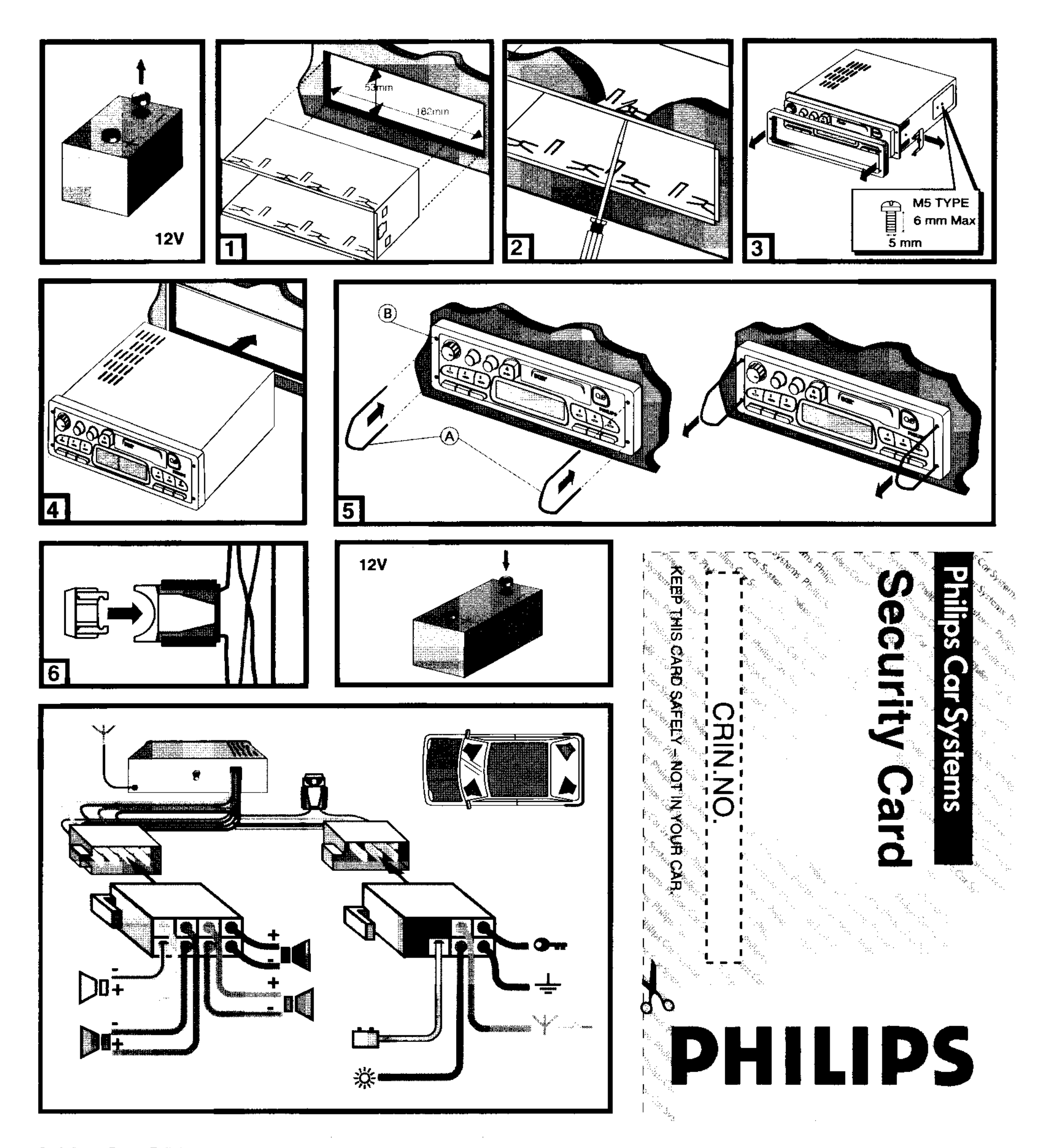
Volume level for Traffic Announcements
If you only want to hear Traffic Announcement.
• Tune to your prefered TA-station.
• Adjust the desired volume.
• Briefly press 'MUTE'.

Switch on TA mode (so that Traffic Announcements have priority)
• Select a FM band with BAND key.
• Press the TA key for at least 2 seconds (until you hear a beep). The display shows ' TA'.
• If the tuned station does not enable the reception of Traffic Announcements,the display shows 'NO TA'. The radio automatically searches an appropriate station.
• You will hear the Traffic Announcements when broadcast.
• If you play a cassette, the radio will interrupt cassette playback each time a Traffic Announcement is broadcast.

Interrupting a Traffic Announcement
If you do not wish to continue listening to a particular Traffic Announcement, you can interrupt it without switching off the TA mode.
• Briefly press the 'MUTE' to silence the set or,
• Press the TA key for at least 2 seconds (until you hear a beep).The set will return to its previous operating mode.

Switching off TA mode (so that Traffic Announcements do not have priority)
• Press the TA key for at least 2 seconds (until you hear a beep). TA disappears from the display.

Note:
– If the TA mode is switched on,search tuning only selects stations which enable the reception of Traffic Announcements.
– If the tuned station becomes too weak to enable the set to provide the RDS traffic service,you will hear beeps repeated at intervals.Use search tuning to find another station.



MOUNTING INSTRUCTION

Voltage and polarity: The set must be connected to a 12V car battery with negative terminal to earth (car chassis).

Warning: To prevent short-circuiting, disconnect the negative car battery terminal until the set has been mounted and connected.

INSTALLING METAL SLEEVE

- Install the metal sleeve in the dashboard (Fig.1).
- Fix metal sleeve into place by pressing the metal tags outwards using a screwdriver (Fig.2).
- If installing this set in a Japanese car, use the side holes which align with the holes in the side of the mounting opening (Fig.3).
- Only use M5 screws that are not longer than 6mm. If necessary, remove the trimplate around the front panel and the side springs (Fig.3).

POWER SUPPLY AND LOUDSPEAKER

If your car is equipped with ISO connectors, simply insert them in connectors of the car radio. If not, you can use an adaptor cable (Refer to the table at the end of this booklet).

Connection details

Power supply

- **Red lead** : Connect to a switched 12V supply (switched on/off by car ignition).
- **Yellow/red lead** : Connect to a permanent 12V supply. This supply is needed for the set's memory.
- **Grey lead** : Connect to a 12V supply. When the car headlamps are switched on, the rotary knobs of radio are illuminated (even when the radio is switched off).
- **Brown lead** : Connect to earth (car chassis).

Loudspeakers (only use 4ohm loudspeakers)

- Do not connect any of the loudspeaker leads to earth or directly to a booster/amplifier.
- **Connecting 4 loudspeakers**

	Front	Rear
Left+	Green	Brown
Left-	Green/black	Brown/black
Right+	Grey	Blue
Right-	Grey/black	Blue/black

OTHER CONNECTIONS

- **Automatic Aerial**: This radio can provide a 12V signal for the control of an automatic motor aerial or the supply of an electronic aerial by connection .
- Do not use this connection for the supply lead of the aerial motor!

MOUNTING RADIO (Figs.4)

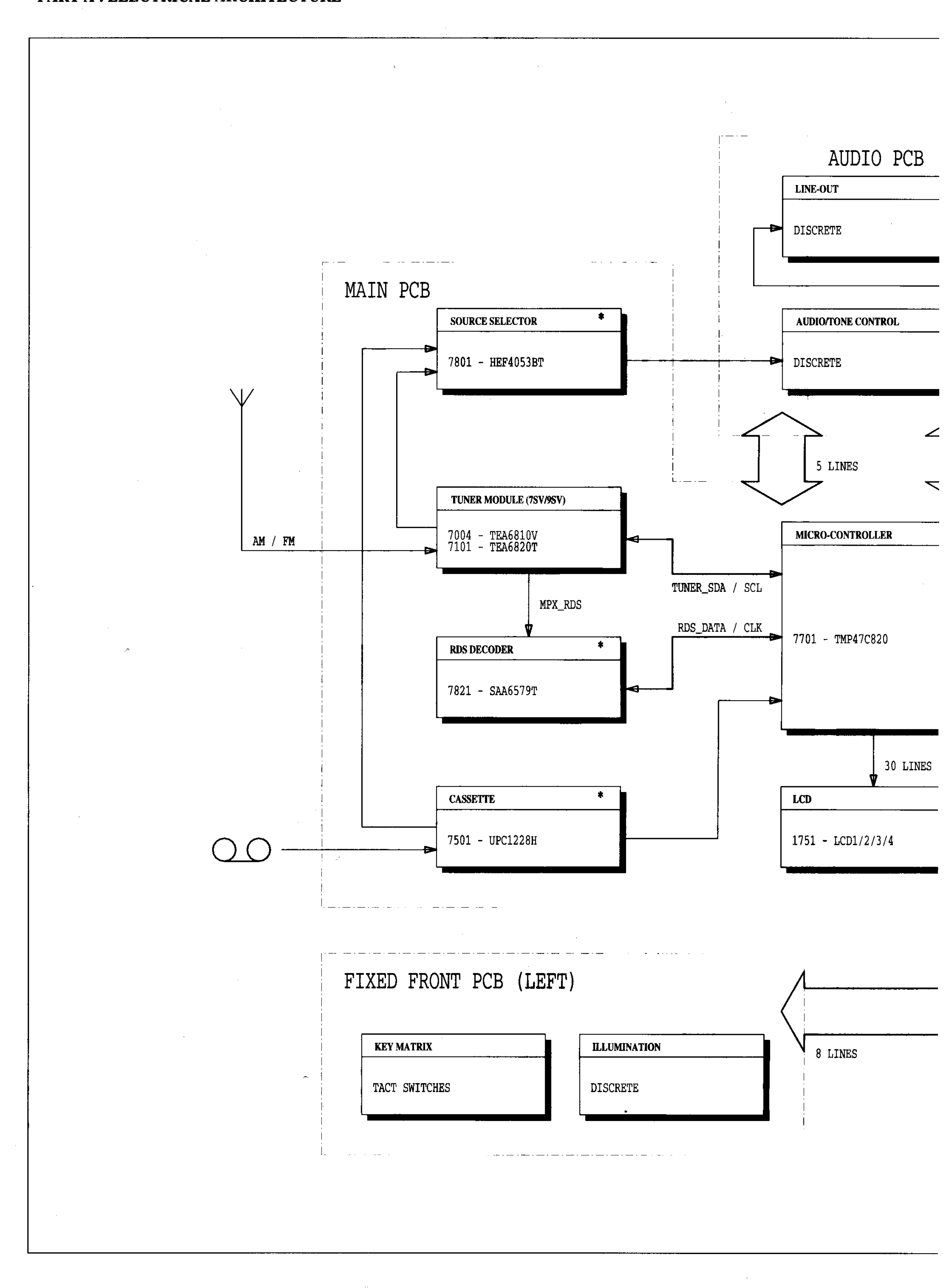
- Insert aerial plug into aerial socket (good reception is only possible with a good aerial).
- Slide the radio into the metal sleeve until the springs at either side of the radio snap into the openings of the sleeve .
- Finally reconnect the negative car battery terminal.

REMOVING RADIO (using the two U- brackets supplied)

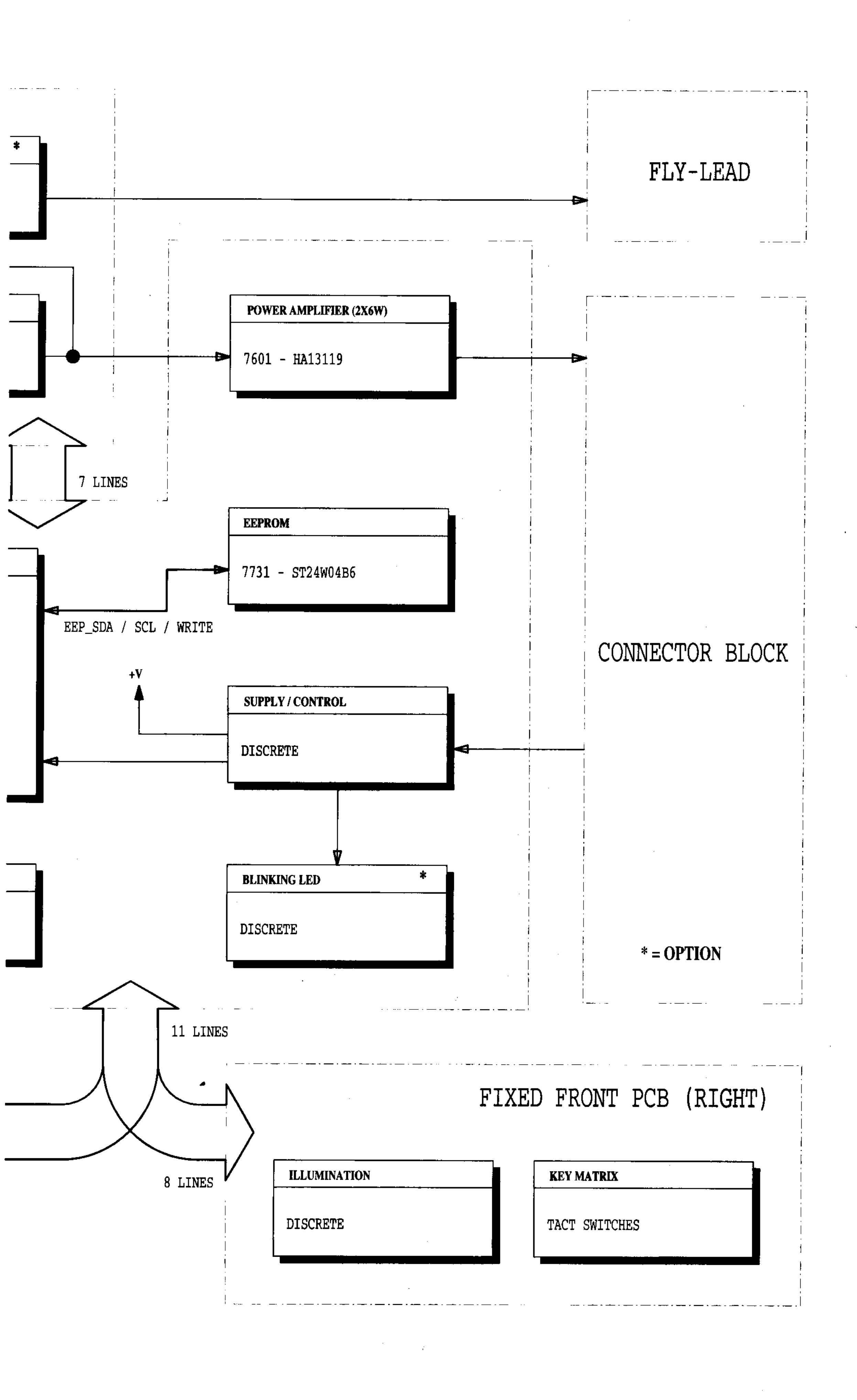
- Insert both U-brackets Ⓐ into the holes Ⓑ until they lock. Pull out the radio (Fig.5).

REPLACING FUSE

- Use a 3A blade-type fuse (Fig.6).

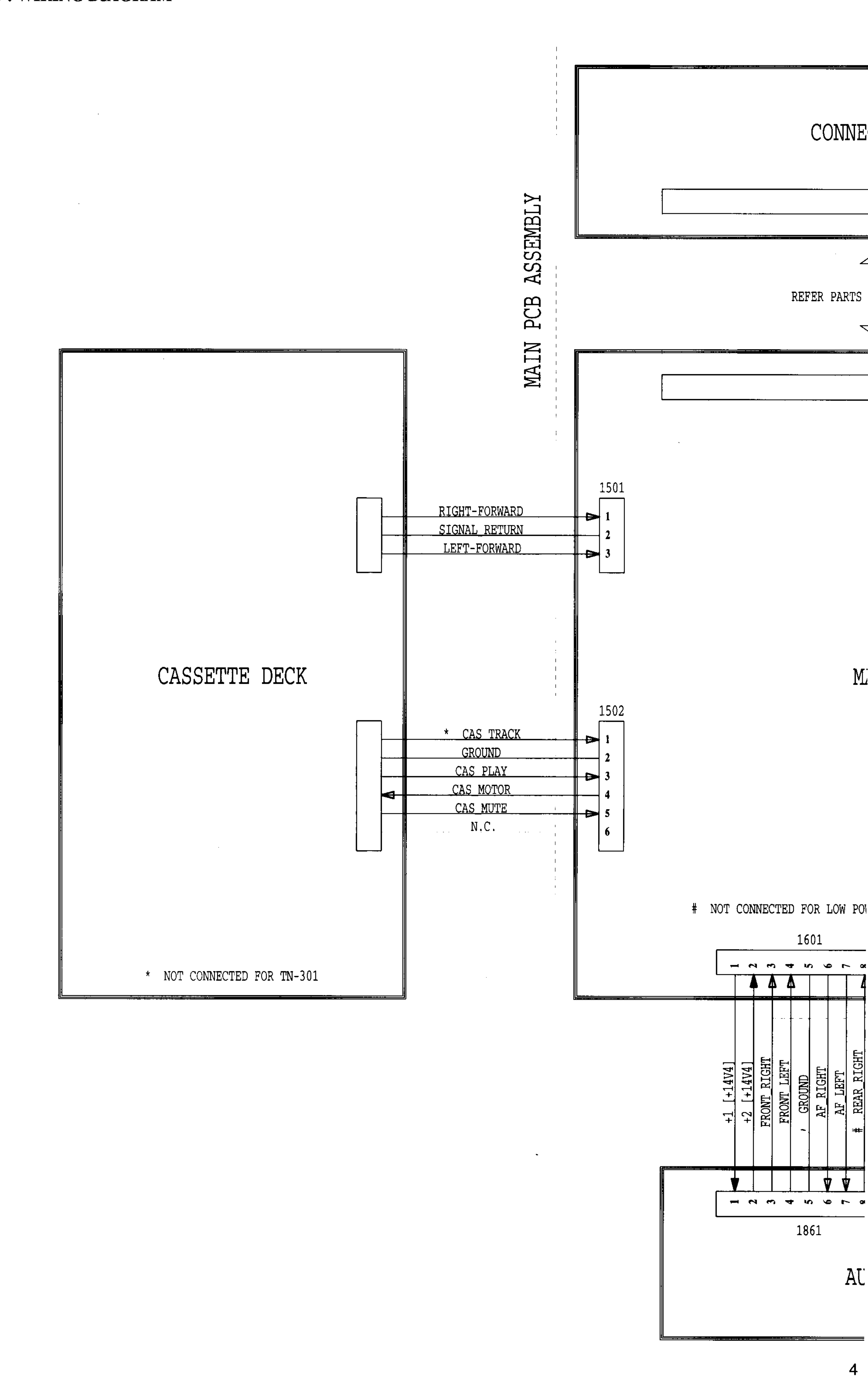


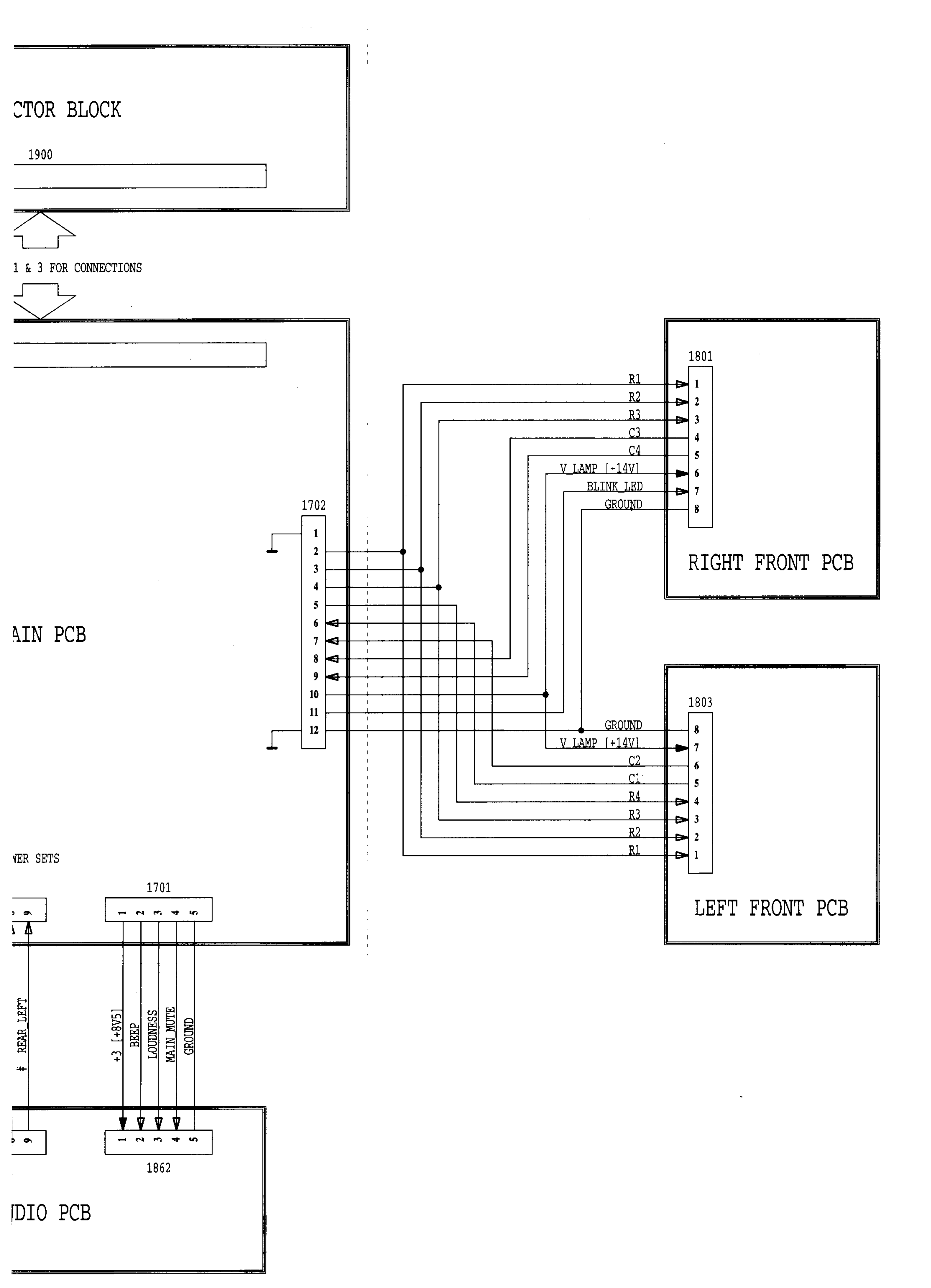
AUDIO PCB
LINE-OUT
DISCRETE
AUDIO/TONE CONTROL
DISCRETE
MAIN PCB
SOURCE SELECTOR *
7801 - HEF4053BT
5 LINES
TUNER MODULE (7SV/9SV)
7004 - TEA6810V
7101 - TEA6820T
AM / FM
MICRO-CONTROLLER
TUNER_SDA / SCL
MPX_RDS
RDS_DATA / CLK
7701 - TMP47C820
RDS DECODER *
7821 - SAA6579T
30 LINES
CASSETTE *
7501 - UPC1228H
LCD
1751 - LCD1/2/3/4
FIXED FRONT PCB (LEFT)
8 LINES
KEY MATRIX
TACT SWITCHES
ILLUMINATION
DISCRETE



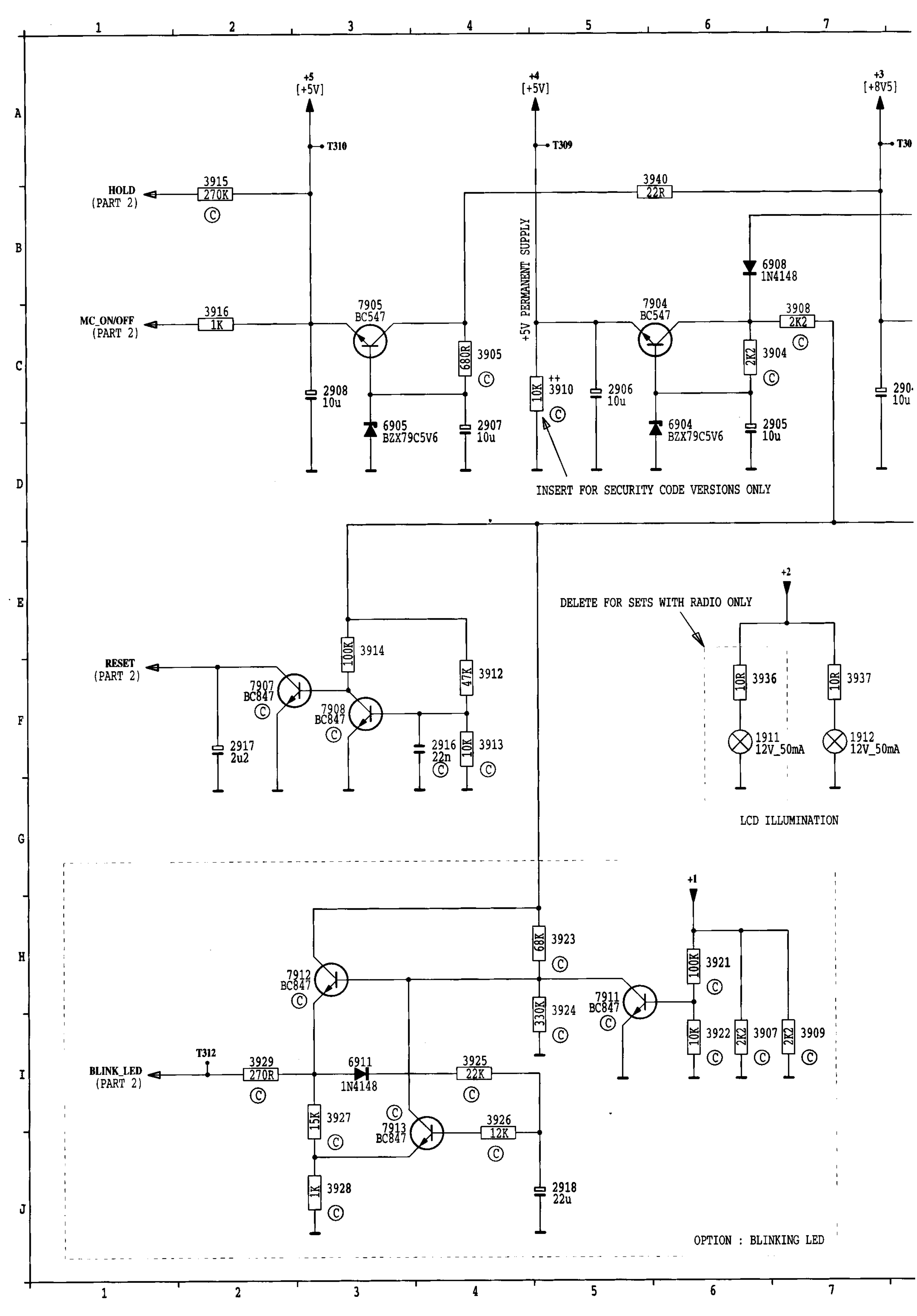
*
FLY-LEAD
POWER AMPLIFIER (2X6W)
7601 - HA13119
7 LINES
EEPROM
7731 - ST24W04B6
EEP_SDA / SCL / WRITE
CONNECTOR BLOCK
+V
SUPPLY / CONTROL
DISCRETE
BLINKING LED
*
DISCRETE
* = OPTION
11 LINES
FIXED FRONT PCB (RIGHT)
8 LINES
ILLUMINATION
DISCRETE
KEY MATRIX
TACT SWITCHES

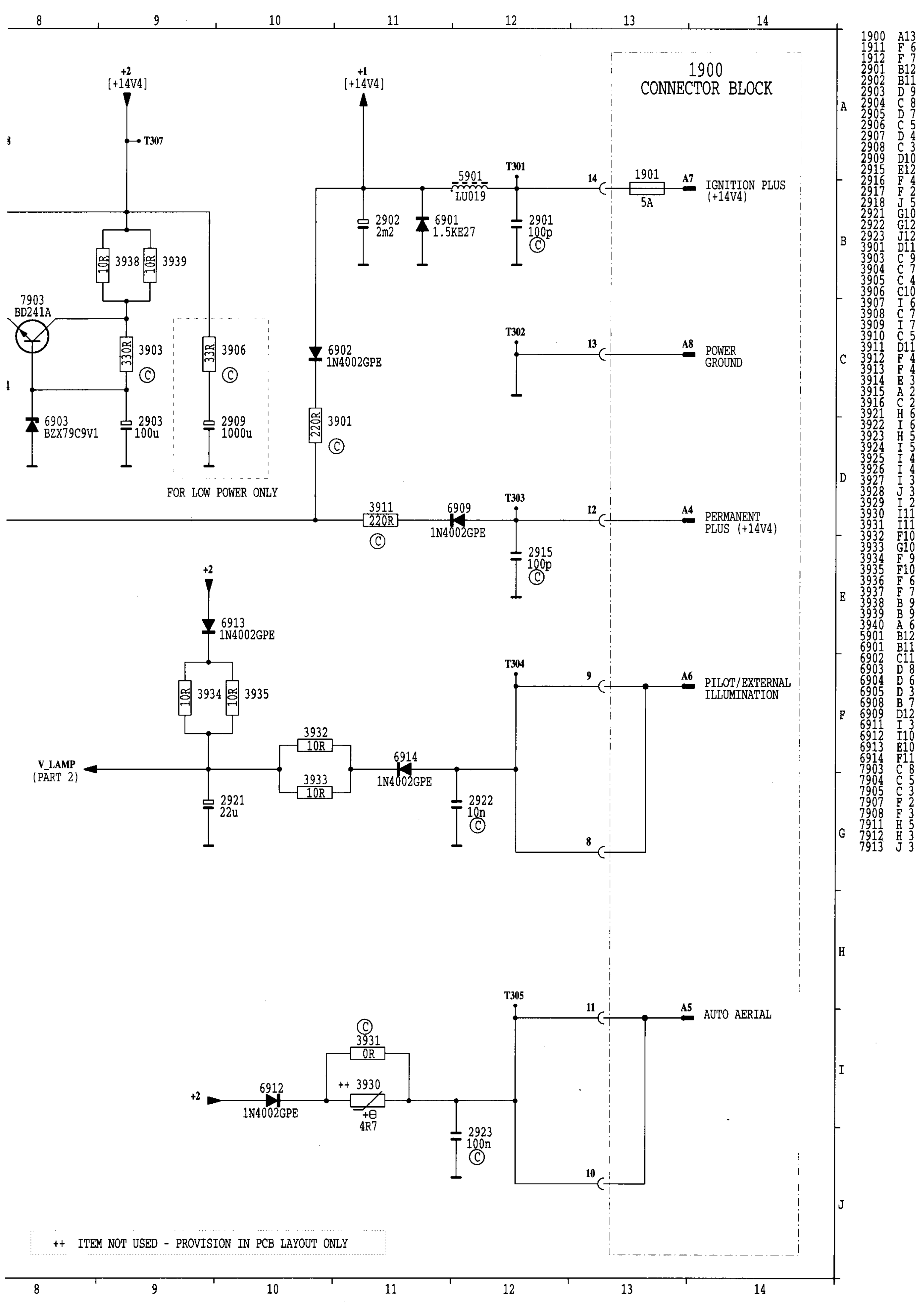
PART B : WIRING DIAGRAM




CTOR BLOCK
1900
1 & 3 FOR CONNECTIONS
AIN PCB
1702
1
2
3
4
5
6
7
8
9
10
11
12
WER SETS
1701
1 2 3 4 5
REAR LEFT
+3 [+8V5]
BEEP
LOUDNESS
MAIN MUTE
GROUND
1 2 3 4 5
1862
JDIO PCB
RIGHT FRONT PCB
1801
R1
R2
R3
C3
C4
V_LAMP [+14V]
BLINK_LED
GROUND
1 2 3 4 5 6 7 8
LEFT FRONT PCB
1803
GROUND
V_LAMP [+14V]
C2
C1
R4
R3
R2
R1
8 7 6 5 4 3 2 1

PART 3 : SUPPLY/CONTROL & BLINKING LED (MAIN PCB)




8
9
10
11
12
13
14
+2
[+14V4]
T307
+1
[+14V4]
1900
CONNECTOR BLOCK
T301
5901
LU019
14
1901
5A
A7
IGNITION PLUS
(+14V4)
2902
2m2
6901
1.5KE27
2901
100p
10R
3938
10R
3939
7903
BD241A
330R
3903
33R
3906
6902
1N4002GPE
T302
13
A8
POWER
GROUND
6903
BZX79C9V1
2903
100u
2909
1000u
220R
3901
FOR LOW POWER ONLY
3911
220R
6909
1N4002GPE
T303
12
A4
PERMANENT
PLUS (+14V4)
2915
100p
+2
6913
1N4002GPE
T304
9
A6
PILOT/EXTERNAL
ILLUMINATION
10R
3934
10R
3935
3932
10R
6914
1N4002GPE
V_LAMP
(PART 2)
3933
10R
2921
22u
2922
10n
8
T305
11
A5
AUTO AERIAL
3931
0R
++ 3930
+2
6912
1N4002GPE
4R7
2923
100n
10
++ ITEM NOT USED - PROVISION IN PCB LAYOUT ONLY
A
B
C
D
E
F
G
H
I
J
1900 A13
1911 F 6
1912 F 7
2901 B12
2902 B11
2903 D 9
2904 C 8
2905 D 7
2906 C 5
2907 D 4
2908 C 3
2909 D10
2915 E12
2916 F 4
2917 F 2
2918 J 5
2921 G10
2922 G12
2923 J12
3901 D11
3903 C 9
3904 C 7
3905 C 4
3906 C10
3907 I 6
3908 C 7
3909 I 7
3910 C 5
3911 D11
3912 F 4
3913 F 4
3914 E 3
3915 A 2
3916 C 2
3921 H 6
3922 I 6
3923 H 5
3924 I 5
3925 I 4
3926 I 4
3927 I 3
3928 J 3
3929 I 2
3930 I11
3931 I11
3932 F10
3933 G10
3934 F 9
3935 F10
3936 F 6
3937 F 7
3938 B 9
3939 B 9
3940 A 6
5901 B12
6901 B11
6902 C11
6903 D 8
6904 D 6
6905 D 3
6908 B 7
6909 D12
6911 I 3
6912 I10
6913 E10
6914 F11
7903 C 8
7904 C 5
7905 C 3
7907 F 2
7908 F 3
7911 H 5
7912 H 3
7913 J 3

PART 4 : KEY MATRIX & ILLUMINATION (FRONT PCB)

LEFT FRONT PCB

*1825 AST
*1826 BAND
#1817 BAND
#1818 AST
*1827 LOUD
#1816 LOUD
#1815 LOUD
*1828 1
*1829 2
*1830 3

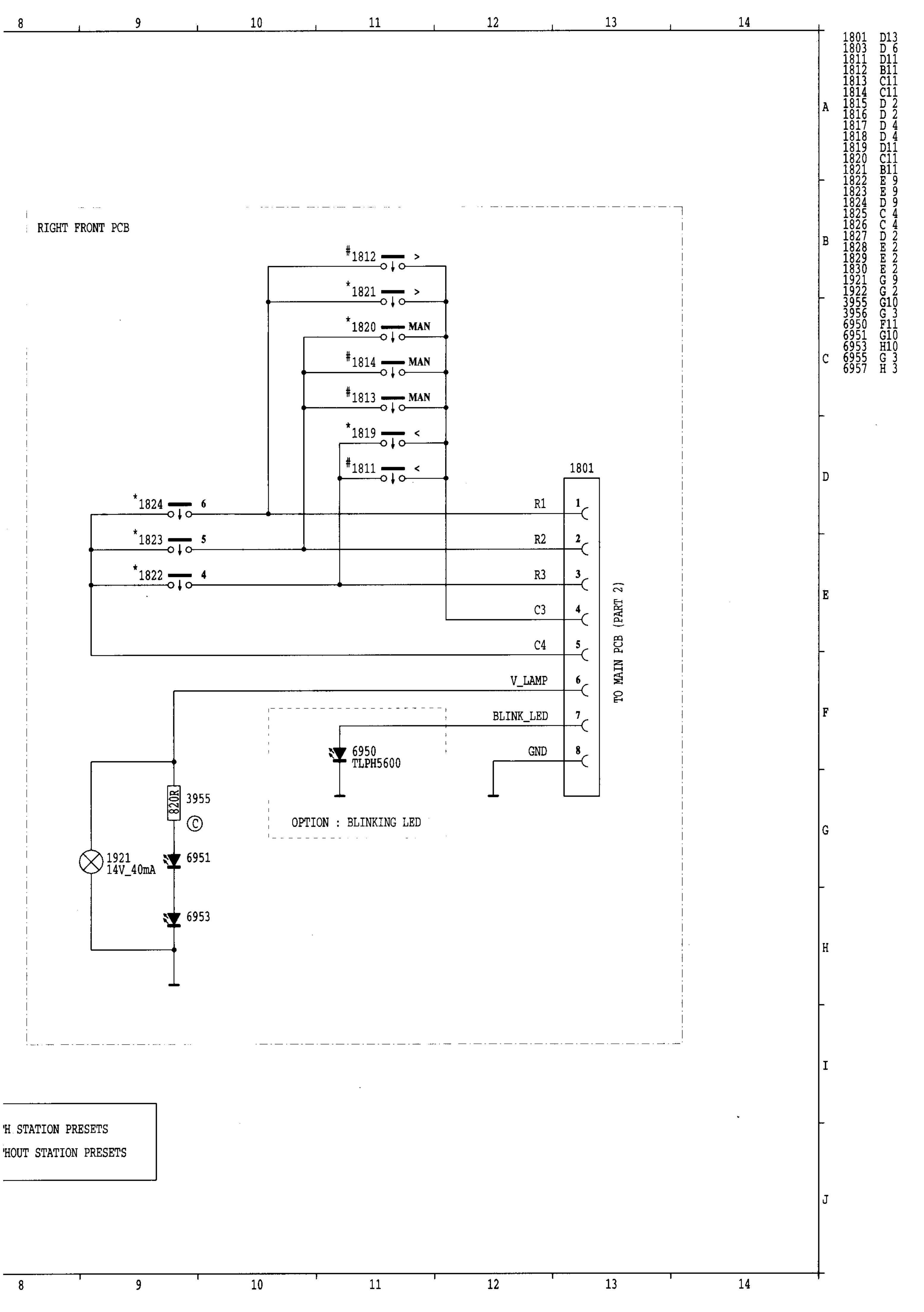
1803
R1 1
R2 2
R3 3
R4 4
C1 5
C2 6
V_LAMP 7
GND 8

TO MAIN PCB (PART 2)

820R 3956 Ⓒ
1922 14V_40mA
6955
6957

* INSERT 1819 TO 1830 FOR SETS WIT

\# INSERT 1811 TO 1818 FOR SETS WIT


RIGHT FRONT PCB
#1812 >
*1821 >
*1820 MAN
#1814 MAN
#1813 MAN
*1819 <
#1811 <
*1824 6
*1823 5
*1822 4
1801
R1 1
R2 2
R3 3
C3 4
C4 5
V_LAMP 6
BLINK_LED 7
GND 8
TO MAIN PCB (PART 2)
6950
TLPH5600
OPTION : BLINKING LED
820R 3955
1921
14V_40mA
6951
6953
'H STATION PRESETS
'HOUT STATION PRESETS
1801 D13
1803 D 6
1811 D11
1812 B11
1813 C11
1814 C11
1815 D 2
1816 D 2
1817 D 4
1818 D 4
1819 D11
1820 C11
1821 B11
1822 E 9
1823 E 9
1824 D 9
1825 C 4
1826 C 4
1827 D 2
1828 E 2
1829 E 2
1830 E 2
1921 G 9
1922 G 2
3955 G10
3956 G 3
6950 F11
6951 G10
6953 H10
6955 G 3
6957 H 3

1 2 3 4 5 6 7

A B C D E F G H I J

3851
+1 9 10 +2
ON/OFF VOLUME

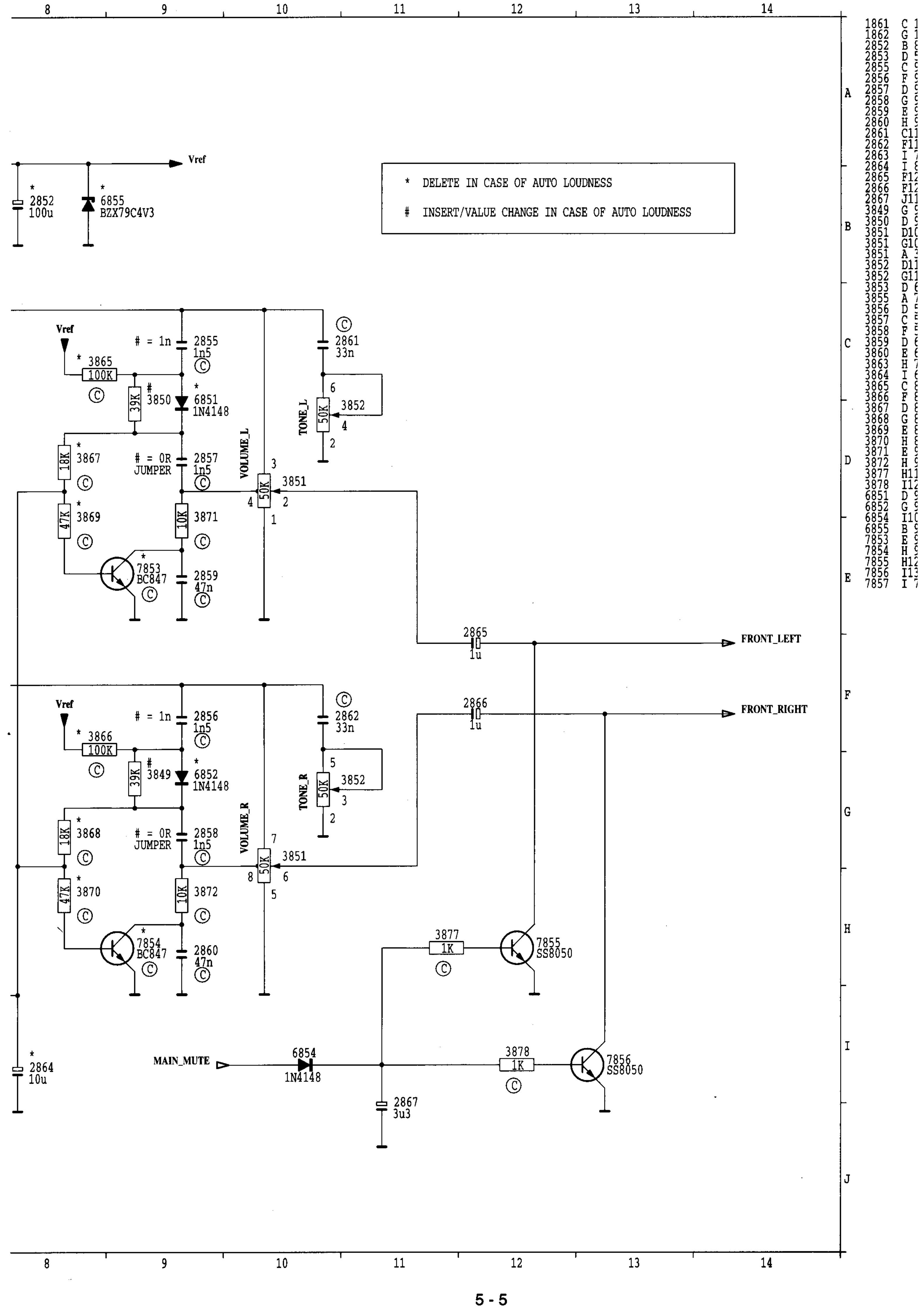
+3 * 3855 1K ©

1861 +1 +2
TO MAIN PCB (PART 1)
1
2
3 FRONT_RIGHT
4 FRONT_LEFT
5
6 AF_RIGHT
7 AF_LEFT
8 N.C.
9 N.C.

AF_LEFT 3857 15K ©
3859 220K ©
+3
3856 22K ©
BEEP 2853 4n7 ©
3853 50K BALANCE 3 2 1
3860 220K ©
AF_RIGHT 3858 15K ©

1862 +3
TO MAIN PCB (PART 2)
1
2 BEEP
3 LOUDNESS
4 MAIN_MUTE
5 N.C.

+3
* 3863 4K7
* 2863 2u2
LOUDNESS * 3864 100K ©
* 7857 BC847 ©



* DELETE IN CASE OF AUTO LOUDNESS
INSERT/VALUE CHANGE IN CASE OF AUTO LOUDNESS
Vref
2852 100u
6855 BZX79C4V3
2855 1n5
= 1n
3865 100K
3850 39K
6851 1N4148
3867 18K
3869 47K
= 0R JUMPER
2857 1n5
3871 10K
7853 BC847
2859 47n
VOLUME_L
3851 50K
2861 33n
TONE_L
3852 50K
2865 1u
FRONT_LEFT
2856 1n5
3866 100K
3849 39K
6852 1N4148
3868 18K
3870 47K
2858 1n5
3872 10K
7854 BC847
2860 47n
VOLUME_R
2862 33n
TONE_R
2866 1u
FRONT_RIGHT
3877 1K
7855 SS8050
MAIN_MUTE
6854 1N4148
2867 3u3
3878 1K
7856 SS8050
2864 10u

ADDITIONAL FUNCTION CHECK:

Item	Input	Output
External illumination +	Set off Inject +12V at pin A6	Power pilot light turns ON.
Auto Antenna	Connect a resistor of 25Ω from A5 to GND. Switch on set.	Voltage drop between pin A7 & A5 < 1V.
Line-out (only for RC188)	Tuner set to FM mode, 97MHz Inject 97Mhz, 22.5kHz dev. E'=1mV, 1kHz mod. Set volume setting at 1Vrms at speaker output.	Measure at Line-out Flyleads a 1kHz AF signal of 200mVrms.

POWER IGNITION CHECK :

Steps	Permanent (A4)	Ignition (A7)	Action	Observation
1	ON	ON	Turn set ON with power key.	Set is turn on.
2	ON	OFF	Switch OFF ignition	Set switches off. Blinking LED (if any) should blink.
3	ON	ON	Switch ON ignition.	Set will be on.

TUNER CHECK:

IC96 7SV/9SV module is a Non repairable module, complete spare parts as an module is readily available. For general check, please refer to the manual " General Check & Alignment procedures for Car Systems" 4822 725 25456. Use a matching circuit (artifical aerials) with Zi = 75ohm.

CHECK	TUNE IN	OUTPUT
α – 3 dB	FM 97.5MHz, 1mV, Dev=22.5kHz, f mod. = 400Hz FM 97.5MHz, 8uV, Dev=22.5kHz, f mod. = 400Hz	Conn. Block B3, B5 = 0dB (reference level) Conn. Block B3, B5 = -3dB
SDS 10dB Crosstalk	FM 97.5MHz, 1mV, Dev=22.5kHz, f mod. = 1kHz FM 97.5MHz, 150uV, Dev=22.5kHz, f mod. = 1kHz (L)	Conn. Block B3, B5 = 0dB (reference level) Conn. Block B3 = -10dB
Stereo Channel separation	FM 97.5MHz, 1mV, Dev=22.5kHz, f mod. = 1kHz FM 97.5MHz, 1mV, Dev=22.5kHz, f mod. = 1kHz (L)	Conn. Block B3, B5 = 0dB (reference level) Conn. Block B3 ≤ -21dB
26dB SNR	FM 97.5MHz, 4.4uV, Dev=22.5kHz, f mod. = 1kHz FM 97.5MHz, 4.4uV, Dev=22.5kHz, unmodulated	Conn. Block B3, B5 = 0dB (reference level) Conn. Block B3, B5 ≤ -26dB
FM Demodulated level	FM 97.5MHz, 1mV, Dev=22.5kHz, f mod. = 1kHz	Pin 13 of IC96 = 280mV (AC) ± 3dB Pin 7 of IC96 = 215mV (AC) ± 2dB
FM Search Sensitivity	FM 97.5MHz, unmodulated	DX : 10uV < E < 20uV LO : 190uV < E < 290uV
AM Demodulated level	AM 1053kHz, 1mV, m=30%, f mod. = 1kHz	Pin 13 of IC96 = 280mV (AC) ± 2dB
26dB SNR	MW 1053kHz, 22uV, m=30%, f mod. = 1kHz MW 1053kHz, 22uV, unmodulated	Conn. Block B3, B5 = 0dB (reference level) Conn. Block B3, B5 ≤ -26dB
26dB SNR	LW 207kHz, 35uV, m=30%, f mod. = 1kHz LW 207kHz, 35uV, unmodulated	Conn. Block B3, B5 = 0dB (reference level) Conn. Block B3, B5 ≤ -26dB
AM Search Sensitivity	AM 1053kHz, unmodulated	DX : E = 14uV LO : E = 70uV

CLOCK ALIGNMENT :

Signal	Test point	Frequency	Aligned with
CLK	Pin 49 of main uP	682.667Hz	2705
GND	Power supply Gnd		

Service Test Mode :

Press and hold Band key, then turn on the set to enter the service test mode. There are three level of service test mode

First level : LCD display test. All segments of the LCD are lighted up.

Second level : Software release status
"XXXYY r" deontes : RCXXX/YY release 1
e.g. "16900 r" deontes : RC169/00 release 1

Third level : Tuner reception check
"XXXX F M"

XXXX - 4 figures of tuned frequency
F- Field strength
range 0 .... F hexadecimal
(corresponds to Poor signal strength .... Good signal strength)
M - Multipath
range 0 ... F hexadecimal
(corresponds to No multipath signal .... Multipath signal present)

TMP47C820

PINS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
FM(V)	2.95	2.95	2.95	2.95	2.95	2.95	NC	NC	NC	1.05	NC	NC	NC	0.22	0	0.03	0.03
AM(V)	2.95	2.95	2.95	2.95	2.95	2.95	NC	NC	NC	1.05	NC	NC	NC	0.22	0	0.03	0.03
TAPE(V)	2.95	2.95	2.95	2.95	2.95	2.95	NC	NC	NC	1.05	NC	NC	NC	0.22	0	0.03	0.03

PINS	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
FM(V)	0.05	NC	0	2.25	2.34	4.75	4.69	NC	4.8	4.8	4.8	0	4.8	2.39	4.8	4.85	0
AM(V)	0.05	NC	0	2.25	2.34	4.75	4.69	NC	4.8	4.8	4.8	0	4.8	2.39	4.8	4.85	0
TAPE(V)	8.78	NC	0	4.21	4.96	4.87	4.69	NC	4.8	0	4.8	0.7	4.8	2.39	4.8	4.96	0

PINS	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51
FM(V)	4.8	0.04	NC	2.4	4.89	4.9	4.9	4.9	4.9	4.9	4.9	4.9	0	0	0	0	1.82
AM(V)	4.8	0.04	NC	2.4	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	0	0	0	0	1.82
TAPE(V)	4.8	0.02	NC	2.4	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96	0	0	0	0	1.82

PINS	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
FM(V)	2.32	NC	NC	NC	NC	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
AM(V)	2.32	NC	NC	NC	NC	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
TAPE(V)	2.38	NC	NC	NC	NC	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95

PINS	69	70	71	72	73	74	75	76	77	78	79	80
FM(V)	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
AM(V)	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95
TAPE(V)	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95

UPC1228

PINS	1	2	3	4	5	6	7	8
(V)	1.17	0.81	2.95	8.46	0	2.95	0.81	1.17

TDA8561Q

PINS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
(V)	2.15	0	2.15	7.03	14.4	6.93	0	6.9	NC	6.93	0	6.94	14.3	14	2.15	14.3	2.15

ST24C0286

PINS	1	2	3	4	5	6	7	8
V	4.96	4.9	4.9	0	4.96	4.96	4.96	4.96

HA13119

PINS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
V	0.4	0	3.82	0	0	0.4	NC	7	NC	14	NC	0	14.4	14	7

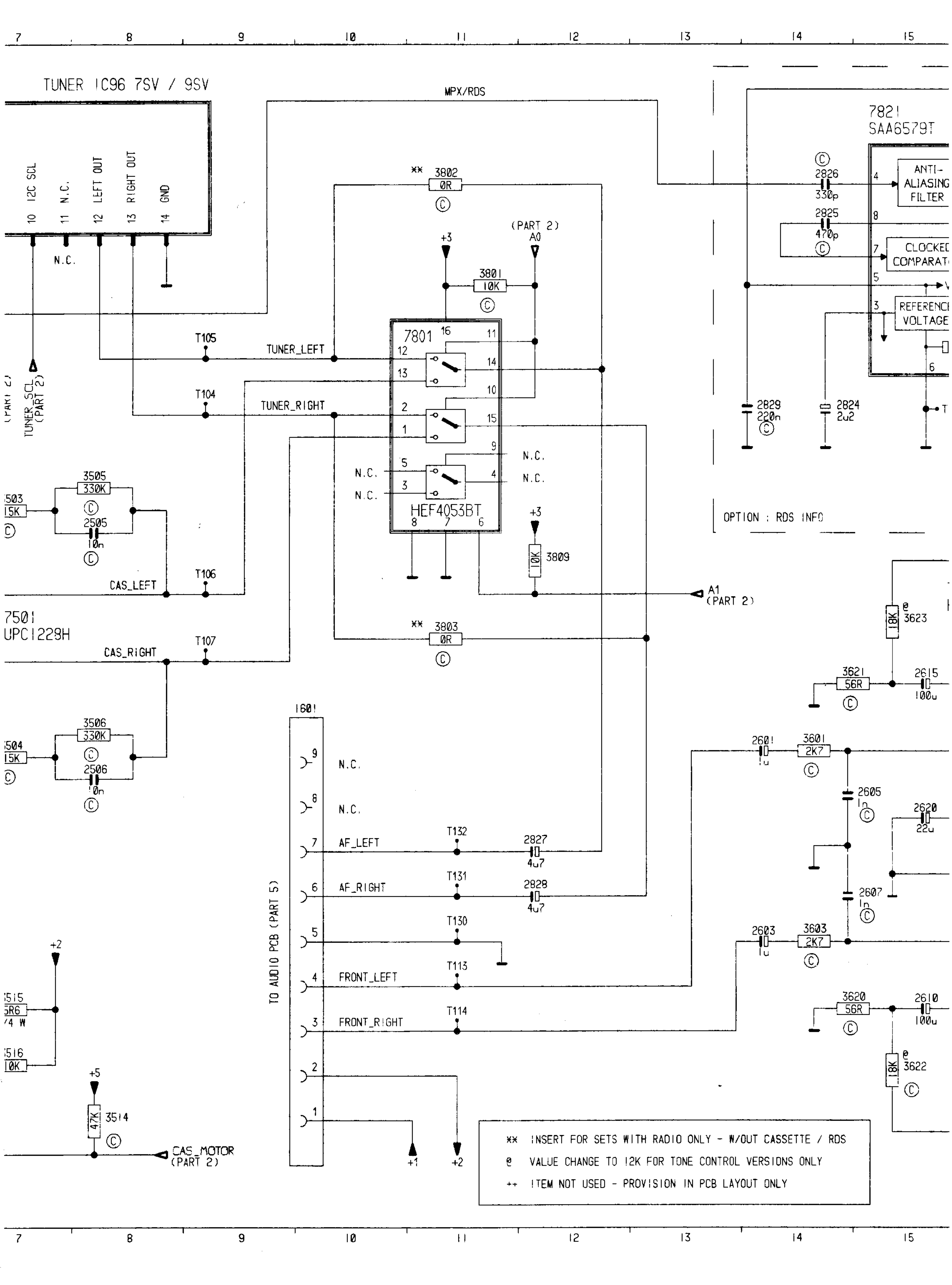
SAA6579T

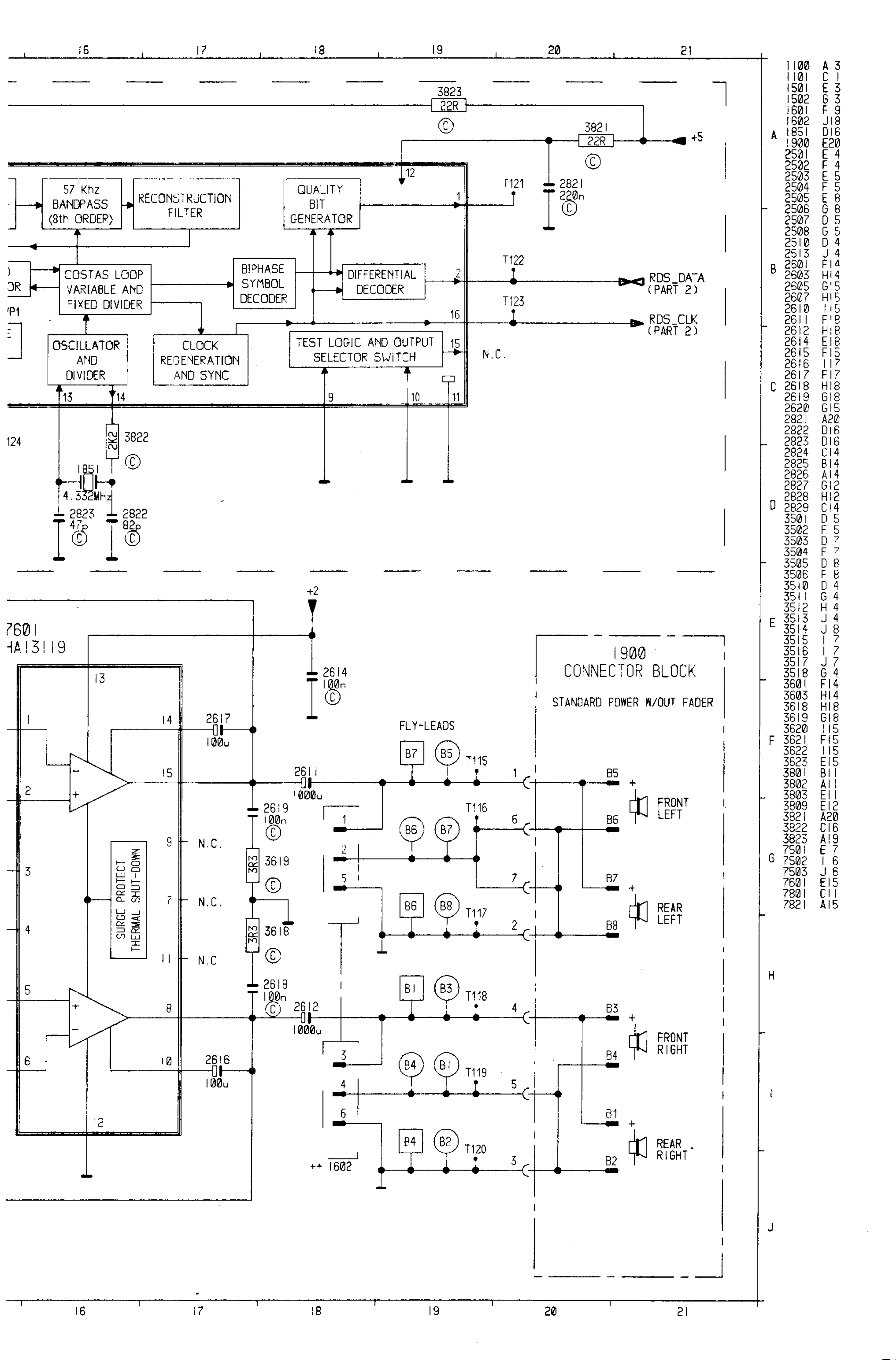
PINS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
V	2.5	2.5	2.39	2.37	4.8	0	2.36	2.4	0	0	0	4.8	2.1	2.35	NC	2.4

TRANSISTOR

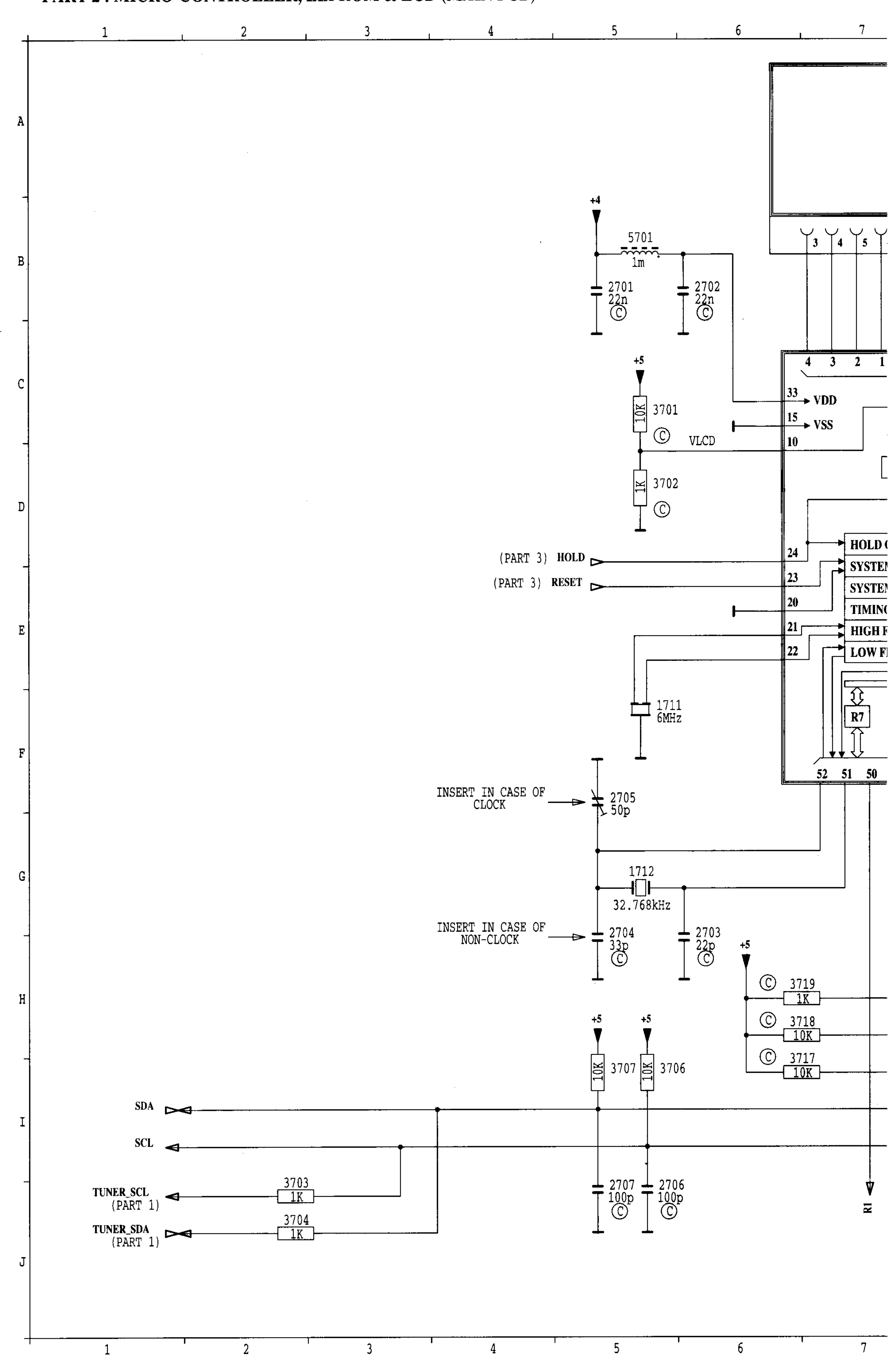
NO	7903	7904	7905
b	9.15	5.6	5.53
c	13.5	13.5	7.04
e	8.5	4.9	4.8

1100
1 AM/FM IN
2 GND
3 LOCK DETECTOR
4 VCC 8.5V
5 GND
6 VCC 5V
7 MPX/RDS OUT
8 LEVEL OUT
9 I2C SDA
AM-FILTER
FM-FILTER
AM/FM
1101
T101
T102
T103
N.C.
N.C.
+3
+5
TUNER_SDA
3510 220R
2510 100u
2507 100u
3501 39R
1501
T125
T126
T127
LEFT
RIGHT
2503 2u2
2501 1n
2502 1n
2504 2u2
2508 100u
3502 39R
CASSETTE-DECK
CDS-36 OR TN-301
1502
T108
T109
T110
T111
T112
TRACK
PLAY
MUTE
N.C.
3511 15K
3518 47K
3512 10K
3513 1K
2513 1n
CAS_TRACK (PART 2)
CAS_PLAY (PART 2)
CAS_MUTE (PART 2)
INSERT FOR CASSETTE AND NON-CASSETTE VERSIONS
7502 BC636
3517 2K7
7503 BC847
* NOT FOR TN-301

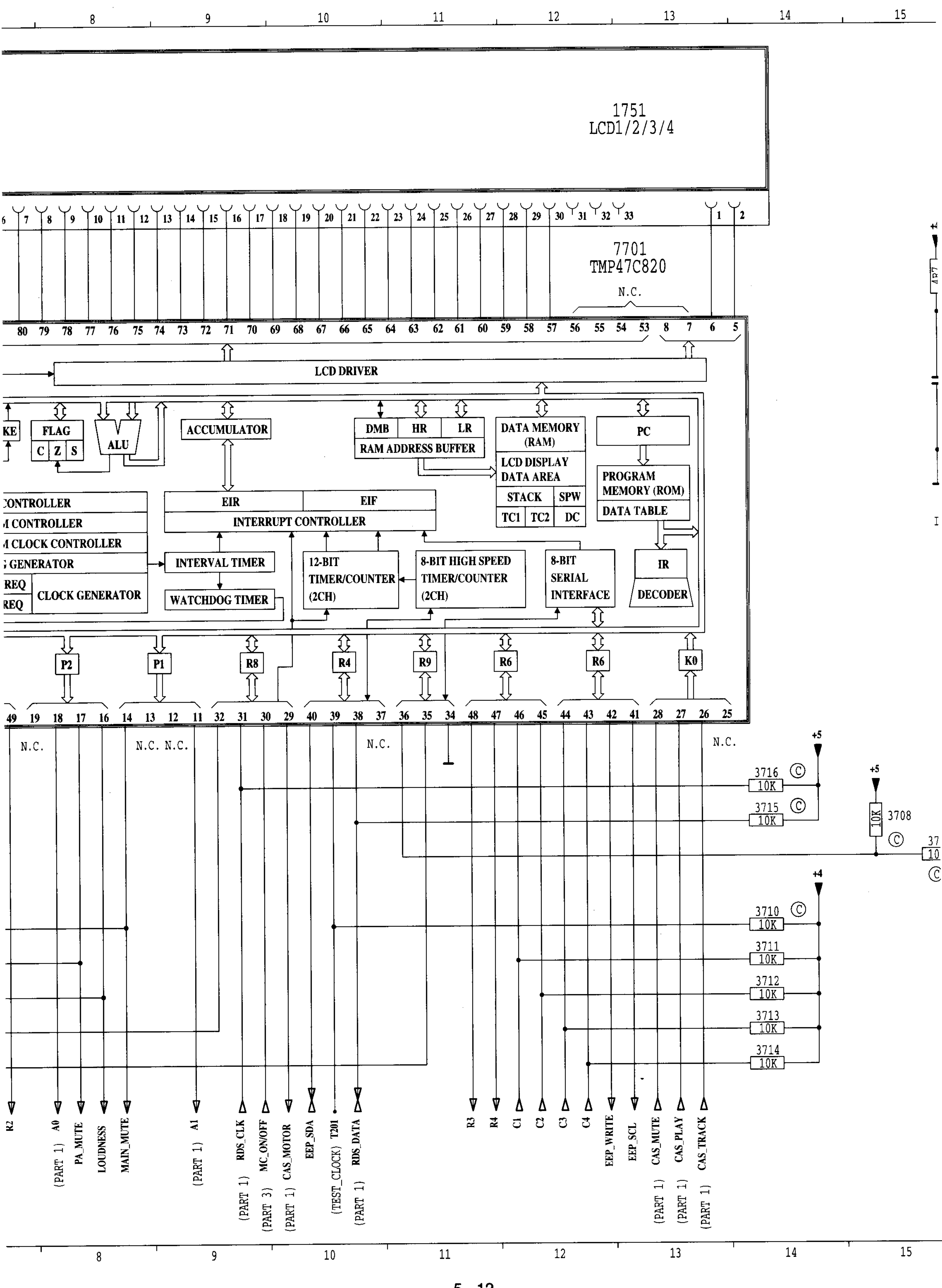

7 8 9 10 11 12 13 14 15
TUNER IC96 7SV / 9SV
10 I2C SCL
11 N.C.
12 LEFT OUT
13 RIGHT OUT
14 GND
N.C.
MPX/RDS
** 3802 0R
(PART 2) A0
+3
3801 10K
7801
HEF4053BT
TUNER_LEFT
TUNER_RIGHT
T105
T104
TUNER_SCL (PART 2)
3505 330K
2505 10n
CAS_LEFT
T106
7501 UPC1228H
CAS_RIGHT
T107
3506 330K
2506 10n
3809 10K
A1 (PART 2)
** 3803 0R
7821 SAA6579T
ANTI-ALIASING FILTER
CLOCKED COMPARAT
REFERENCE VOLTAGE
2826 330p
2825 470p
2829 220n
2824 2u2
OPTION : RDS INFO
1601
N.C.
AF_LEFT
AF_RIGHT
FRONT_LEFT
FRONT_RIGHT
T132
T131
T130
T113
T114
2827 4u7
2828 4u7
TO AUDIO PCB (PART 5)
+1
+2
+5
3514 47K
CAS_MOTOR (PART 2)
@ 3623 18K
3621 56R
2615 100u
2601 1u
3601 2K7
2605 1n
2620 22u
2607 1n
2603 1u
3603 2K7
3620 56R
2610 100u
@ 3622 18K
** INSERT FOR SETS WITH RADIO ONLY - W/OUT CASSETTE / RDS
@ VALUE CHANGE TO 12K FOR TONE CONTROL VERSIONS ONLY
++ ITEM NOT USED - PROVISION IN PCB LAYOUT ONLY

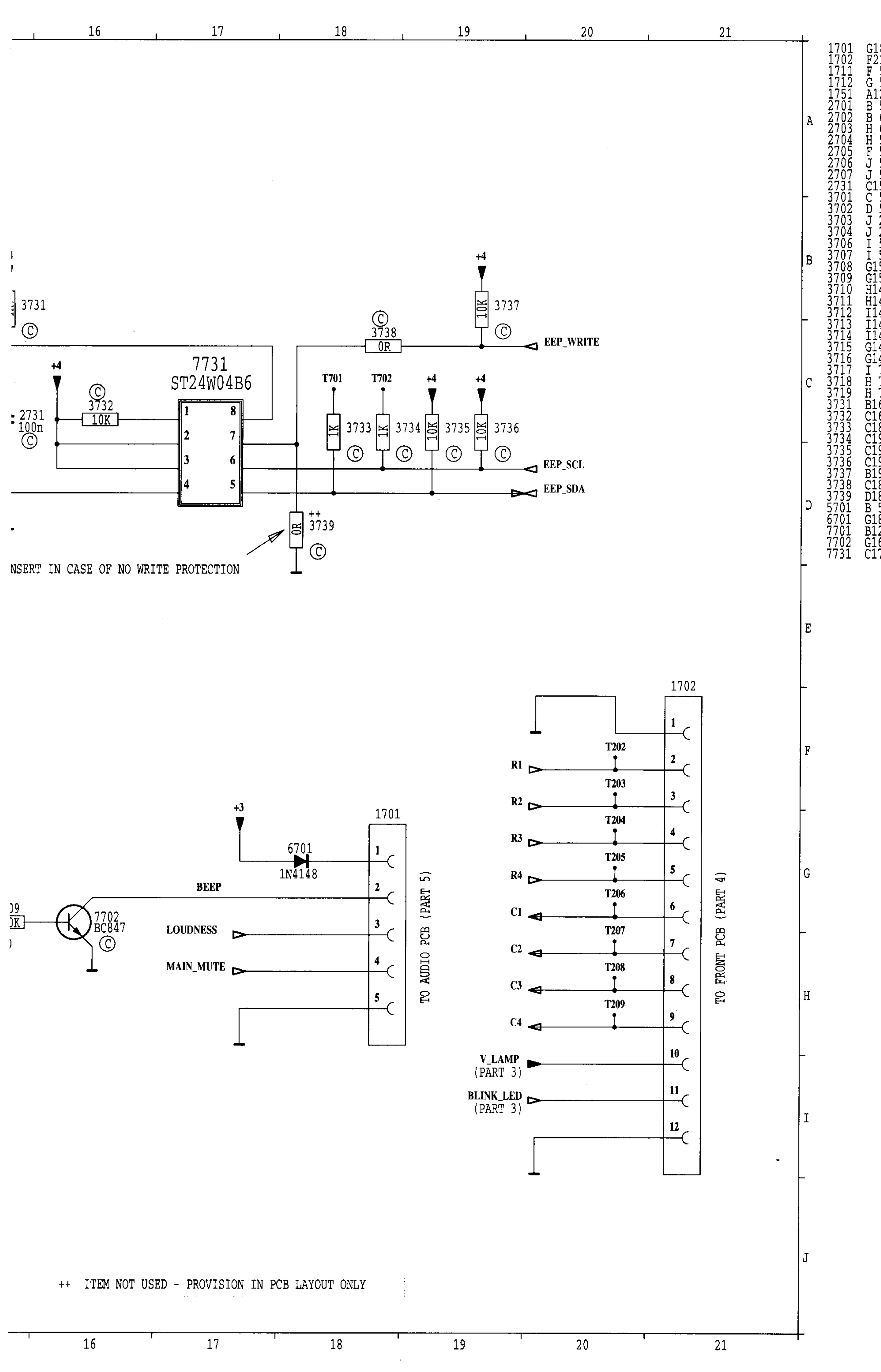


1100	A 3
1101	C 1
1501	E 3
1502	G 3
1601	F 9
1602	J18
1851	D16
1900	E20
2501	E 4
2502	F 4
2503	E 5
2504	F 5
2505	E 8
2506	G 8
2507	D 5
2508	G 5
2510	D 4
2513	J 4
2601	F14
2603	H14
2605	G15
2607	H15
2610	I15
2611	F18
2612	H18
2614	E18
2615	F15
2616	I17
2617	F17
2618	H18
2619	G18
2620	G15
2821	A20
2822	D16
2823	D16
2824	C14
2825	B14
2826	A14
2827	G12
2828	H12
2829	C14
3501	D 5
3502	F 5
3503	D 7
3504	F 7
3505	D 8
3506	F 8
3510	D 4
3511	G 4
3512	H 4
3513	J 4
3514	J 8
3515	I 7
3516	I 7
3517	J 7
3518	G 4
3601	F14
3603	H14
3618	H18
3619	G18
3620	I15
3621	F15
3622	I15
3623	E15
3801	B11
3802	A11
3803	E11
3809	E12
3821	A20
3822	C16
3823	A19
7501	E 7
7502	I 6
7503	J 6
7601	E15
7801	C11
7821	A15



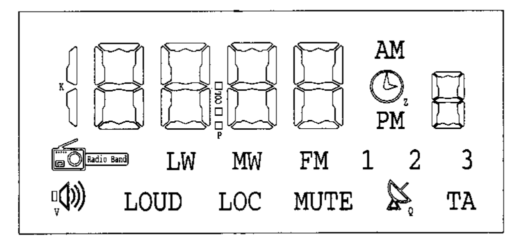
+4
5701
1m
2701
22n
2702
22n
+5
3701
10K
VLCD
3702
1K
33 VDD
15 VSS
10
(PART 3) HOLD
(PART 3) RESET
24
23
20
21
22
HOLD
SYSTEM
SYSTEM
TIMING
HIGH F
LOW F
R7
1711
6MHz
52 51 50
INSERT IN CASE OF
CLOCK
2705
50p
1712
32.768kHz
INSERT IN CASE OF
NON-CLOCK
2704
33p
2703
22p
3719
1K
3718
10K
3717
10K
3707
10K
3706
10K
SDA
SCL
TUNER_SCL
(PART 1)
TUNER_SDA
(PART 1)
3703
1K
3704
1K
2707
100p
2706
100p
R1


1751
LCD1/2/3/4
7701
TMP47C820
N.C.
LCD DRIVER
FLAG
C Z S
ALU
ACCUMULATOR
DMB
HR
LR
RAM ADDRESS BUFFER
DATA MEMORY (RAM)
LCD DISPLAY DATA AREA
STACK
SPW
TC1
TC2
DC
PC
PROGRAM MEMORY (ROM)
DATA TABLE
EIR
EIF
INTERRUPT CONTROLLER
INTERVAL TIMER
WATCHDOG TIMER
CLOCK GENERATOR
12-BIT TIMER/COUNTER (2CH)
8-BIT HIGH SPEED TIMER/COUNTER (2CH)
8-BIT SERIAL INTERFACE
IR
DECODER
P2
P1
R8
R4
R9
R6
R6
K0
3716 10K
3715 10K
3708 10K
3710 10K
3711 10K
3712 10K
3713 10K
3714 10K
+5
+4
A0 (PART 1)
PA_MUTE
LOUDNESS
MAIN_MUTE
A1 (PART 1)
RDS_CLK (PART 1)
MC_ON/OFF (PART 3)
CAS_MOTOR (PART 1)
EEP_SDA
T201 (TEST_CLOCK)
RDS_DATA (PART 1)
R3
R4
C1
C2
C3
C4
EEP_WRITE
EEP_SCL
CAS_MUTE (PART 1)
CAS_PLAY (PART 1)
CAS_TRACK (PART 1)



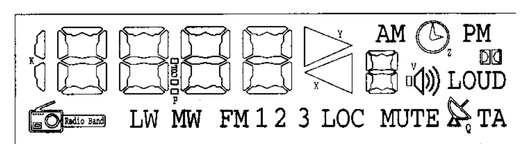
16
17
18
19
20
21
1701 G18
1702 F21
1711 F 5
1712 G 5
1751 A12
2701 B 5
2702 B 6
2703 H 6
2704 H 5
2705 F 5
2706 J 5
2707 J 5
2731 C15
3701 C 5
3702 D 5
3703 J 2
3704 J 2
3706 I 5
3707 I 5
3708 G15
3709 G15
3710 H14
3711 H14
3712 I14
3713 I14
3714 I14
3715 G14
3716 G14
3717 I 7
3718 H 7
3719 H 7
3731 B16
3732 C16
3733 C18
3734 C19
3735 C19
3736 C19
3737 B19
3738 C18
3739 D18
5701 B 5
6701 G18
7701 B12
7702 G16
7731 C17
3731
7731
ST24W04B6
+4
3732
10K
2731
100n
3738
0R
3737
10K
EEP_WRITE
T701
T702
3733
1K
3734
1K
3735
10K
3736
10K
EEP_SCL
EEP_SDA
++
3739
0R
NSERT IN CASE OF NO WRITE PROTECTION
1702
T202
R1
T203
R2
T204
R3
T205
R4
T206
C1
T207
C2
T208
C3
T209
C4
V_LAMP
(PART 3)
BLINK_LED
(PART 3)
TO FRONT PCB (PART 4)
+3
1701
6701
1N4148
BEEP
7702
BC847
LOUDNESS
MAIN_MUTE
TO AUDIO PCB (PART 5)
++ ITEM NOT USED - PROVISION IN PCB LAYOUT ONLY

PART 2A : LCD & PIN-OUT TABLE



LARGE LCD FOR SETS WITH RADIO ONLY (WITHOUT CASSETTE)

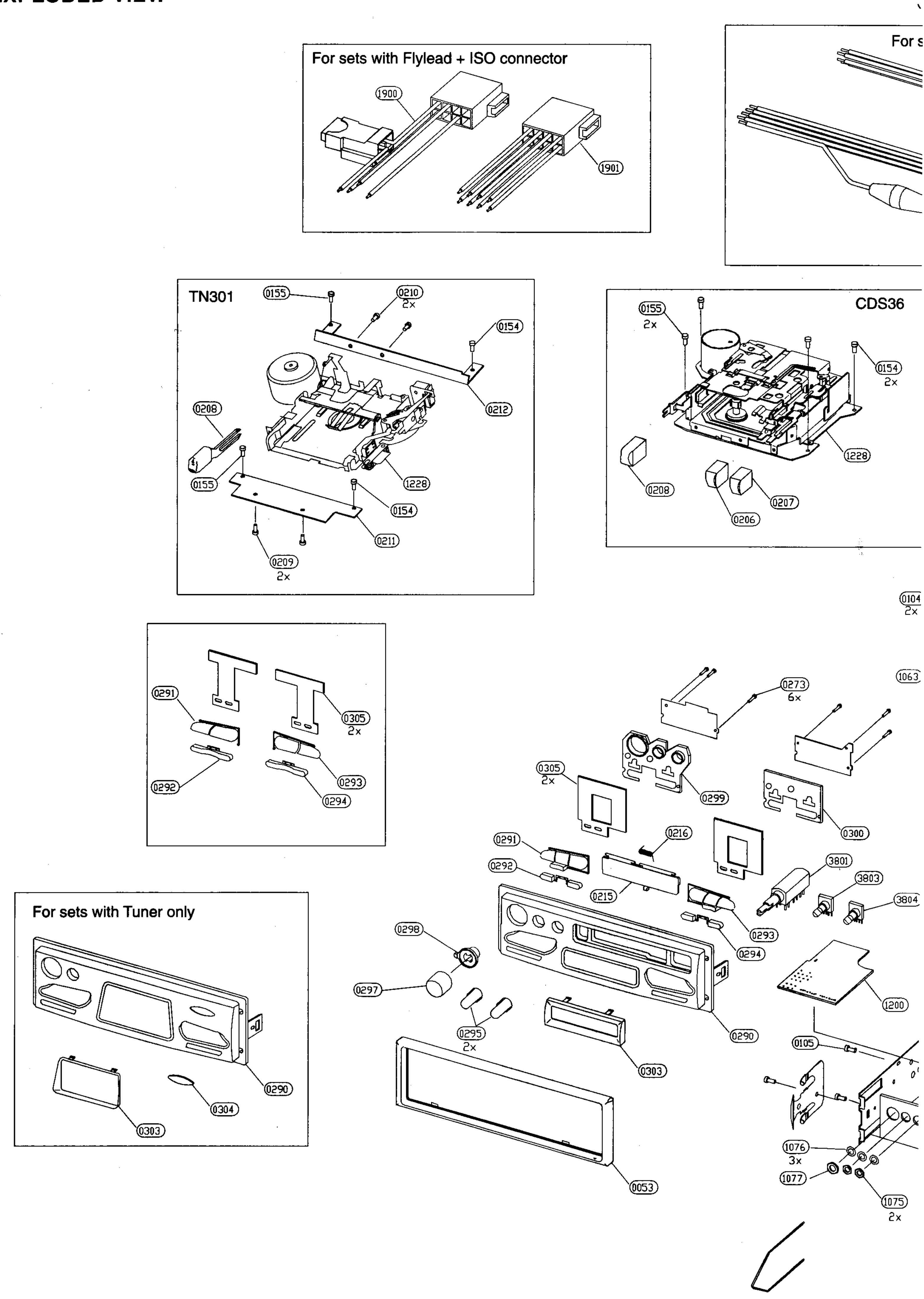
7701 DRIVER PINS	1751 LCD PINS	COM 1	COM 2
6	1	COM 1	
5	2		COM 2
4	3	1e	LW
3	4	1d	1c
2	5	1f	1g
1	6	1a	1b
80	7	2e	MW
79	8	2d	2c
78	9	2f	2g
77	10	2a	2b
76	11	K	P
75	12		
74	13	3e	FM
73	14	3d	3c
72	15	3f	3g
71	16	3a	3b
70	17	4e	1
69	18	4d	4c
68	19	4f	4g
67	20	4a	4b
66	21	2	3
65	22	MUTE	LOC
64	23	5e	LOUD, V
63	24	5d	5c
62	25	5f	5g
61	26	5a	5b
60	27	DOLBY	TA, Q
59	28	AM	COL
58	29	PM	Z
57	30	Radio Band	

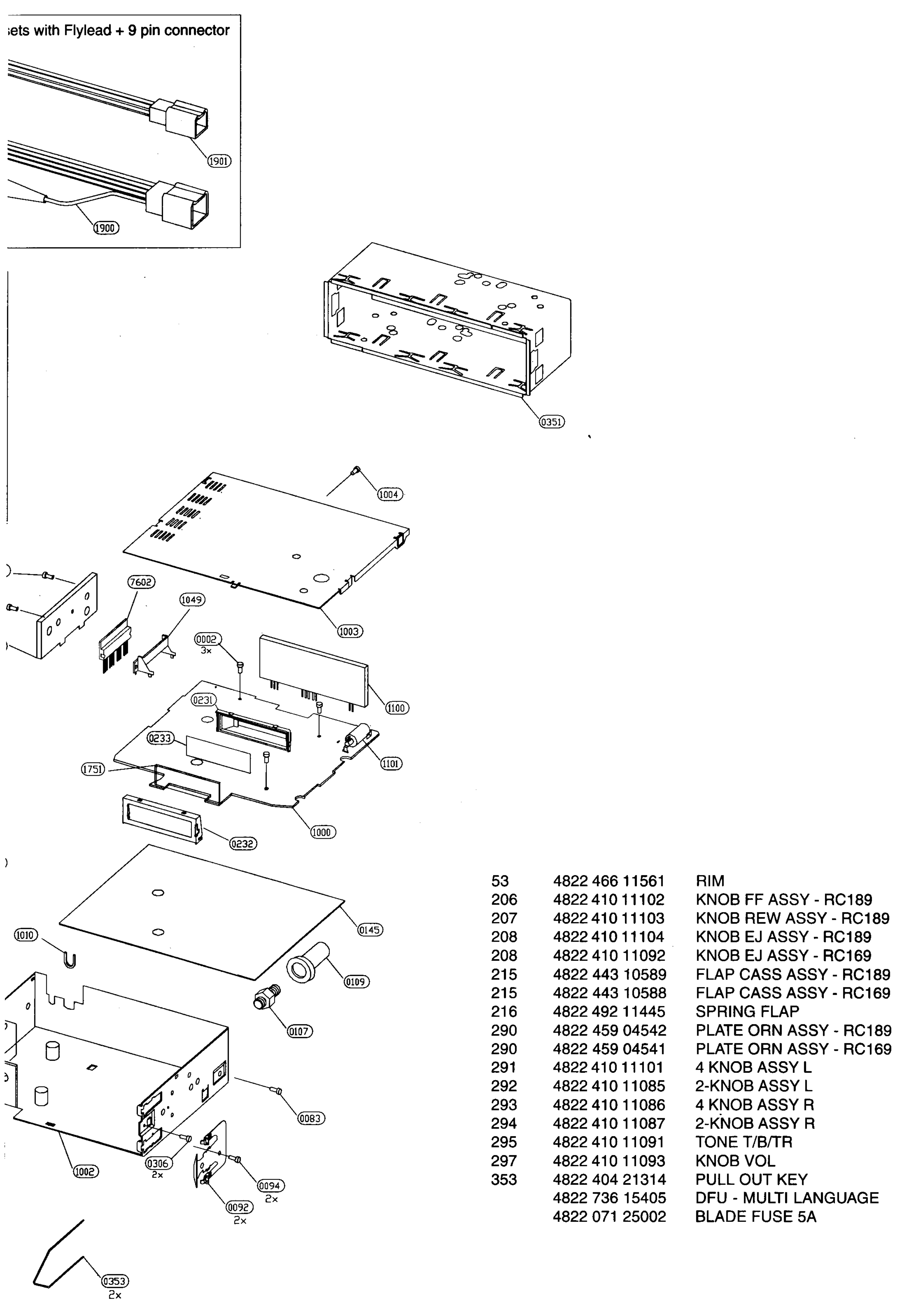


SMALL LCD FOR SETS WITH RADIO AND CASSETTE

7701 DRIVER PINS	1751 LCD PINS	COM 1	COM 2
6	1	COM 1	
5	2		COM 2
4	3	1e	LW
3	4	1d	1c
2	5	1f	1g
1	6	1a	1b
80	7	2e	MW
79	8	2d	2c
78	9	2f	2g
77	10	2a	2b
76	11	K	P
75	12	X	Y
74	13	3e	FM
73	14	3d	3c
72	15	3f	3g
71	16	3a	3b
70	17	4e	1
69	18	4d	4c
68	19	4f	4g
67	20	4a	4b
66	21	2	3
65	22	MUTE	LOC
64	23	5e	LOUD, V
63	24	5d	5c
62	25	5f	5g
61	26	5a	5b
60	27	DOLBY	TA, Q
59	28	AM	COL
58	29	PM	Z
57	30	Radio Band	

EXPLODED VIEW





53	4822 466 11561	RIM
206	4822 410 11102	KNOB FF ASSY - RC189
207	4822 410 11103	KNOB REW ASSY - RC189
208	4822 410 11104	KNOB EJ ASSY - RC189
208	4822 410 11092	KNOB EJ ASSY - RC169
215	4822 443 10589	FLAP CASS ASSY - RC189
215	4822 443 10588	FLAP CASS ASSY - RC169
216	4822 492 11445	SPRING FLAP
290	4822 459 04542	PLATE ORN ASSY - RC189
290	4822 459 04541	PLATE ORN ASSY - RC169
291	4822 410 11101	4 KNOB ASSY L
292	4822 410 11085	2-KNOB ASSY L
293	4822 410 11086	4 KNOB ASSY R
294	4822 410 11087	2-KNOB ASSY R
295	4822 410 11091	TONE T/B/TR
297	4822 410 11093	KNOB VOL
353	4822 404 21314	PULL OUT KEY
	4822 736 15405	DFU - MULTI LANGUAGE
	4822 071 25002	BLADE FUSE 5A

MAIN PCB : MISCELLANEOUS

1100	4822 210 10746	TUNER MODULE IC96 7SV
1711	4822 242 81002	RES CER 6MHZ CST6.00MGW
1712	4822 242 70938	RES XTL 32KHZ768
1751	4822 135 00114	LCD1 - NEGATVE
1819	4822 276 13091	SWI TACT 1P 50MA 12V
1820	4822 276 13091	SWI TACT 1P 50MA 12V
1821	4822 276 13091	SWI TACT 1P 50MA 12V
1822	4822 276 13091	SWI TACT 1P 50MA 12V
1823	4822 276 13091	SWI TACT 1P 50MA 12V
1824	4822 276 13091	SWI TACT 1P 50MA 12V
1825	4822 276 13091	SWI TACT 1P 50MA 12V
1826	4822 276 13091	SWI TACT 1P 50MA 12V
1827	4822 276 13091	SWI TACT 1P 50MA 12V
1828	4822 276 13091	SWI TACT 1P 50MA 12V
1829	4822 276 13091	SWI TACT 1P 50MA 12V
1830	4822 276 13091	SWI TACT 1P 50MA 12V
1851	4822 242 72195	QUARZ 4,332 MHZ AT51
1900	4822 265 10936	FLYLEAD + ISO SUPPLY
1901	4822 321 62645	FLYLEAD + ISO SPK CONN.
1911	4822 134 10082	LAMP 12V 50MA CLEAR
1912	4822 134 10082	LAMP 12V 50MA CLEAR
1921	4822 134 10069	LAMP 14V 40MA WITHOUT COLOUR CAP
1922	4822 134 10069	LAMP 14V 40MA WITHOUT COLOUR CAP

MAIN PCB : CAPACITOR

2705	5322 125 50295	CTRM 50V 6P- 50P NP0

MAIN PCB : COILS

5701	4822 157 53473	IND FXD LAL04 1000U PM10
5901	4822 156 21434	COIL CHOKE LU019

MAIN PCB : DIODE

6701	4822 130 30621	1N4148
6901	4822 130 81624	1.5KE27
6902	5322 130 30684	1N4002GPE
6903	4822 130 30862	BZX79-C
6904	4822 130 34173	BZX79-C
6905	4822 130 34173	BZX79-C
6908	4822 130 30621	1N4148
6909	5322 130 30684	1N4002GPE
6911	4822 130 30621	1N4148
6912	5322 130 30684	1N4002GPE
6913	5322 130 30684	1N4002GPE
6914	5322 130 30684	1N4002GPE
6950	4822 130 10064	BLINKING LED
6951	4822 130 60379	LED ORANGE - RC189/00
6951	4822 130 83694	LED GREEN - RC189/80
6953	4822 130 60379	LED ORANGE - RC189/00
6953	4822 130 83694	LED GREEN - RC189/80
6955	4822 130 60379	LED ORANGE - RC189/00
6955	4822 130 83694	LED GREEN - RC189/80
6957	4822 130 60379	LED ORANGE - RC189/00
6957	4822 130 83694	LED GREEN - RC189/80

MAIN PCB : TRANSISTORS / IC

7501	4822 209 32969	UPC1228H
7502	4822 130 44283	BC636
7503	4822 130 60511	BC847B
7601	4822 209 32427	HA13119
7701	4822 209 15515	TMP47C820DF/50520
7731	4822 900 11055	ST24W04B4 - RC189/00
7731	4822 900 11074	ST24W04B4 - RC189/80
7702	4822 130 60511	BC847B
7801	5322 209 14481	HEF4053BT

MAIN PCB : TRANSISTORS / IC

7821	4822 209 31981	SAA6579T
7903	4822 130 63539	BD241A
7904	4822 130 40959	BC547B
7905	4822 130 40959	BC547B
7907	4822 130 60511	BC847B
7908	4822 130 60511	BC847B
7911	4822 130 60511	BC847B
7912	4822 130 60511	BC847B
7913	4822 130 60511	BC847B

AUDIO PCB

3851	4822 102 40094	POTMETER VOL W FAD
3852	4822 100 12299	POTMETER 50K TONE
3853	4822 100 12298	POTMETER 50K BALANCE
6854	4822 130 30621	1N4148
7855	4822 130 62513	SS8050C
7856	4822 130 62513	SS8050C

NOTE : "Service code for standard components are not listed here, please refer to Components catalogue from Philips Consumer Service."

MAIN PCB : MISCELLANEOUS

1100	4822 210 10746	TUNER IC96 7SV
1711	4822 242 81002	RES CER 6MHZ0 CST6.00MGW
1712	4822 242 70938	RES XTL 32KHZ768
1751	4822 135 00114	LCD1 - NEGATVE
1819	4822 276 13091	SWI TACT 1P 50MA 12V
1820	4822 276 13091	SWI TACT 1P 50MA 12V
1821	4822 276 13091	SWI TACT 1P 50MA 12V
1822	4822 276 13091	SWI TACT 1P 50MA 12V
1823	4822 276 13091	SWI TACT 1P 50MA 12V
1824	4822 276 13091	SWI TACT 1P 50MA 12V
1825	4822 276 13091	SWI TACT 1P 50MA 12V
1826	4822 276 13091	SWI TACT 1P 50MA 12V
1827	4822 276 13091	SWI TACT 1P 50MA 12V
1828	4822 276 13091	SWI TACT 1P 50MA 12V
1829	4822 276 13091	SWI TACT 1P 50MA 12V
1830	4822 276 13091	SWI TACT 1P 50MA 12V
1851	4822 242 72195	QUARZ 4,332 MHZ AT51
1900	4822 265 10936	FLYLEAD + ISO
1901	4822 321 62645	FLYLEAD + ISO SPK CONN.
1911	4822 134 10082	LAMP 12V 50MA CLEAR
1912	4822 134 10082	LAMP 12V 50MA CLEAR
1921	4822 134 10069	LAMP 14V 40MA WITHOUT COLOUR CAP
1922	4822 134 10069	LAMP 14V 40MA WITHOUT COLOUR CAP

MAIN PCB : CAPACITOR

2705	5322 125 50295	CTRM 50V 6P- 50P NP0

MAIN PCB : COILS

5701	4822 157 53473	IND FXD LAL04 1000U PM10
5901	4822 156 21434	COIL CHOKE LU019

MAIN PCB : DIODE

6701	4822 130 30621	1N4148
6901	4822 130 81624	1.5KE27
6902	5322 130 30684	1N4002GPE
6903	4822 130 30862	BZX79-C
6904	4822 130 34173	BZX79-C
6905	4822 130 34173	BZX79-C
6908	4822 130 30621	1N4148
6909	5322 130 30684	1N4002GPE
6911	4822 130 30621	1N4148
6912	5322 130 30684	1N4002GPE
6913	5322 130 30684	1N4002GPE
6914	5322 130 30684	1N4002GPE
6950	4822 130 10064	BLINKING LED
6951	4822 130 60379	LED ORANGE - RC169/00
6951	4822 130 83694	LED GREEN - RC169/80
6953	4822 130 60379	LED ORANGE - RC169/00
6953	4822 130 83694	LED GREEN - RC169/80
6955	4822 130 60379	LED ORANGE - RC169/00
6955	4822 130 83694	LED GREEN - RC169/80
6957	4822 130 60379	LED ORANGE - RC169/00
6957	4822 130 83694	LED GREEN - RC169/80

MAIN PCB : TRANSISTORS / IC

7501	4822 209 32969	UPC1228H
7502	4822 130 44283	BC636
7503	4822 130 60511	BC847B
7601	4822 209 32427	HA13119
7701	4822 209 15515	TMP47C820DF/50520
7702	4822 130 60511	BC847B
7703	4822 900 11056	ST24W04B6 - RC169/00
7703	4822 900 11057	ST24W04B6 - RC169/80
7801	5322 209 14481	HEF4053BT

MAIN PCB : TRANSISTORS / IC

7821	4822 209 31981	SAA6579T
7903	4822 130 63539	BD241A
7904	4822 130 40959	BC547B
7905	4822 130 40959	BC547B
7907	4822 130 60511	BC847B
7908	4822 130 60511	BC847B
7911	4822 130 60511	BC847B
7912	4822 130 60511	BC847B
7913	4822 130 60511	BC847B

AUDIO PCB

3851	4822 102 40094	POTMETER VOL W FAD
3852	4822 100 12299	POTMETER 50K TONE
3853	4822 100 12298	POTMETER 50K BALANCE
6854	4822 130 30621	1N4148
7855	4822 130 62513	SS8050C
7856	4822 130 62513	SS8050C

NOTE : "Service code for standard components are not listed here, please refer to Components catalogue from Philips Consumer Service."